

WHAT IS CLAIMED IS:

1. An inkjet printhead having an array of printing elements, where first and second printing elements  
5 which discharge relatively different amounts of ink are arranged on the same array in a predetermined direction, comprising:

storage means for sequentially storing print data that is serially inputted;

- 10 holding means for holding the print data stored in said storage means; and

- a driving control circuit for driving respective printing elements in accordance with a selection signal indicative of which of the first or second printing  
15 element is to be driven, the print data held by said holding means, and a driving signal indicative of a driving period,

wherein the print data is inputted to either the first or second printing element.

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2. The inkjet printhead according to claim 1, wherein the array of printing elements includes a same number of the first and second printing elements that are arranged alternately, and is configured such that  
25 one print data is inputted to a pair of adjacent first and second printing elements.

3. The inkjet printhead according to claim 1,  
wherein said printhead is configured such that the  
first and second printing elements are divided into a  
plurality of blocks to be driven, each including an  
5 equal number of first and second printing elements,  
wherein the print data is inputted to each of the  
plurality of blocks, and  
said driving control circuit drives respective  
printing elements in accordance with the selection  
10 signal, the print data held by said holding means, the  
driving signal, and a block signal designating a block  
to be driven.

4. The inkjet printhead according to claim 1,  
15 wherein the selection signal is serially inputted  
subsequent to the print data, and is separated from an  
output of said holding means.

5. The inkjet printhead according to claim 1,  
20 wherein the array of printing elements is provided for  
at least two colors so as to enable color printing  
using plural colors.

6. The inkjet printhead according to claim 5,  
25 wherein the plural colors include cyan, magenta,  
yellow, and black.

7. The inkjet printhead according to claim 5,  
wherein the selection signal is separately inputted to  
the at least two arrays of printing elements.

5 8. The inkjet printhead according to claim 5,  
wherein the selection signal is commonly inputted to  
the at least two arrays of printing elements.

9. The inkjet printhead according to claim 1,  
10 wherein the printing elements perform printing by  
utilizing heat energy.

10. A driving method of an inkjet printhead having an  
array of printing elements, where first and second  
15 printing elements which discharge relatively different  
amounts of ink are arranged on the same array in a  
predetermined direction, said method comprising:

a data input step of serially inputting print  
data for the first or second printing element;  
20 a storing step of sequentially storing the  
inputted print data;  
a holding step of holding the stored print data;  
a selecting step of inputting a selection signal,  
indicative of which of the first or second printing  
25 element is to be driven;  
a driving designation step of inputting a driving  
signal indicative of a driving period; and

a driving control step of driving respective printing elements in accordance with the print data held, the selection signal, and the driving signal.

5 11. The driving method of an inkjet printhead according to claim 10, wherein the array of printing elements includes a same number of the first and second printing elements that are arranged alternately, and in  
10 said data input step, one print data is inputted to a pair of adjacent first and second printing elements.

12. The driving method of an inkjet printhead according to claim 10, further comprising:

a dividing step of dividing the first and second  
15 printing elements into a plurality of blocks, each including an equal number of first and second printing elements; and

a block designating step of inputting a block signal that designates a block to be driven,

20 wherein in said data input step, the print data is inputted to each of the plurality of blocks, and in said driving control step, respective printing elements are driven in accordance with the selection signal, the print data held, the driving signal, and the block  
25 signal.

13. The driving method of an inkjet printhead

according to claim 10, wherein said data input step  
further comprises a step of serially inputting the  
selection signal subsequent to the print data, and  
separating the selection signal from the print data  
5 held.

14. The driving method of an inkjet printhead  
according to claim 10, wherein the printhead has the  
array of printing elements for at least two colors so  
10 as to enable color printing using plural colors, and  
in said selecting step, the selection signal is  
separately inputted to the at least two arrays of  
printing elements.

15 15. The driving method of an inkjet printhead  
according to claim 10, wherein the printhead has the  
array of printing elements for at least two colors so  
as to enable color printing using plural colors, and  
in said selecting step, the selection signal is  
20 commonly inputted to the at least two arrays of  
printing elements.

16. An inkjet printhead having first and second  
printing elements which discharge relatively different  
25 amounts of ink, comprising:  
storage means for sequentially storing print data  
that is serially inputted;

holding means for holding the print data stored  
in said storage means;

a driving control circuit for driving respective  
printing elements in accordance with a selection signal  
5 indicative of which of the first or second printing  
element is to be driven, the print data held by said  
holding means, and a driving signal indicative of a  
driving period; and

a signal line, to which the print data and the  
10 selection signal are serially inputted.

17. The inkjet printhead according to claim 16,  
wherein the print data is serially inputted to said  
signal line subsequent to the selection signal.

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18. The inkjet printhead according to claim 17,  
wherein data for the first or second printing element  
is inputted per one input of the print data.

20 19. A driving method of an inkjet printhead having  
first and second printing elements which discharge  
relatively different amounts of ink, said method  
comprising:

a storing step of sequentially storing print data  
25 that is serially inputted;

a holding step of holding the print data stored;  
an input step of inputting a selection signal

indicative of which of the first or second printing element is to be driven; and

a driving control step of driving respective printing elements in accordance with the print data held, and a driving signal indicative of a driving period,

wherein the print data and the selection signal are serially inputted from a same signal line.

10 20. The driving method of an inkjet printhead according to claim 19, wherein the print data is serially inputted to the signal line subsequent to the selection signal.

15 21. The driving method of an inkjet printhead according to claim 19, wherein data for the first or second printing element is inputted per one input of the print data.

20 22. A substrate for an inkjet printhead which discharges ink by utilizing heat energy generated by a plurality of heaters incorporated in the substrate, said heaters divided into m numbers of groups each having n numbers of heaters, said substrate comprising:  
25 m x n numbers of driving circuits, provided in correspondence with each of the heaters, for driving each of the heaters;

a selection data transfer circuit for separating input data into image data for driving m numbers of heaters and a selection signal for selecting m numbers of groups and n numbers of heaters constituting each group;

a holding circuit for inputting the image data for driving the m numbers of heaters, received from said selection data transfer circuit, to supply the image data in units of each group to the heaters constituting each of the m numbers of groups; and

a selection data holding circuit for inputting the selection signal for selecting the m numbers of groups and n numbers of heaters constituting each group, received from said selection data transfer circuit, to select the heaters to be driven via said driving circuits,

wherein the n numbers of heaters are arranged opposite to each other in a zigzag manner with an ink supplying orifice on the center, and said selection data holding circuit selects one of the n numbers of heaters constituting each group.

23. The substrate for an inkjet printhead according to claim 22, wherein the n numbers of heaters have an equal size, and amounts of ink discharged from the heaters by heat energy generated are equal.



24. The substrate for an inkjet printhead according to claim 22, wherein the n number of heaters have different sizes, and amounts of ink discharged from the heaters by heat energy generated are different.

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25. The substrate for an inkjet printhead according to claim 22, wherein each of said driving circuits is configured with a DMOS transistor.

10 26. An inkjet printhead employing a substrate for an inkjet printhead which discharges ink by utilizing heat energy generated by a plurality of heaters incorporated in the substrate, said heaters divided into m numbers of groups each having n numbers of heaters, said  
15 substrate comprising:

m x n numbers of driving circuits, provided in correspondence with each of the heaters, for driving each of the heaters;

a selection data transfer circuit for separating  
20 input data into image data for driving m numbers of heaters and a selection signal for selecting m numbers of groups and n numbers of heaters constituting each group;

a holding circuit for inputting the image data  
25 for driving the m numbers of heaters, received from said selection data transfer circuit, to supply the image data in units of each group to the heaters

constituting each of the m numbers of groups; and

a selection data holding circuit for inputting  
the selection signal for selecting the m numbers of  
groups and n numbers of heaters constituting each  
5 group, received from said selection data transfer  
circuit, to select the heaters to be driven via said  
driving circuits,

wherein the n numbers of heaters are arranged  
opposite to each other in a zigzag manner with an ink  
10 supplying orifice on the center, and said selection  
data holding circuit selects one of the n numbers of  
heaters constituting each group.